



2000 12 19

가

60/256,637

(Mycoplasma hyopneumoniae)

1

가

가

5

2

가

2

2

가  
Mycoplasma hyorhinis)

2

(

가

가

(weaning)

6

가

가

[Fort Dodge Animal Health(FDAH)]

[Suvaxyn<sup>®</sup> Respifend<sup>®</sup> MH]

1

2

2

2

3

2

1

/

가

1

가

가

1

1 25%(v/v) 5 12%(v/v) ( ( 가  
 (Streptococcus suis), (Haemophilus parasuis), (Pasteurella multocida),  
 (Bordetella bronchiseptica), (Actinobacillus pleuropneumoniae),  
 (Salmonella choleraesuis) (leptospira))

1

가

MHDCE

DNA

1

1

5,338,543

5,565,205

2

[Difco. Laboratories]

PPLO(

(CCU)

가가

[ :Thomas, et al., Agri

-Practice, Vol. 7 No. 5, pp. 26-30]

(MEM)

HEPES

MEM

가  
(2,3,10,15,19,23-

)

(Carbopol)

2,909,462

3,790,665

(Pluronic)

R

R L121

(poloxamer) 401

1% 25%,

2% 15%,  
2

5% 12% v/v  
가 가  
가 가

10g/L

가

R L121( 가

10

150ml/L

0.5

50 100ml/L

Carbamer)934P) 2ml/L 934P( ( 1:25 1:50 가

934 P NF 941NF 가 CH<sub>2</sub>CHOOH) n [B.F Goodrich] R L121, L61, L8 1 L101 BASF

L 가 0.5 10g/ 가 1 3ml/L 2 6ml/L

1 3 x 10<sup>9</sup> MHDCE/ml 2ml 1 x 10<sup>8</sup> 3 x 10<sup>11</sup> MHDCE/ml, 1 x 10<sup>9</sup> 1 5ml, 2 5ml . 1 10ml,

가

1

mstrong C.)(Purdue University, West Lafayette, Indiana) P-5722-3 가 (Ar 7 (Master Seed)

144 가 . pH 7.4 PPLO , L- 18 (BEI)

DTA) 0.01% 0.07% 가 U.S.P. 0.250g/l (E 30µg/ml

DNA

0.25g, / L121 가 , 1000ml 900mL 10g, (Kodak) 40ml, 80 3.2ml 0.25, L121(BASF Corporation) 20ml, (autoclaving) 가 0.2%가 가 1:10,000 가

가 30

1,000,000 ( 2mL) : %vol/vol

(> 1.0 x 10 <sup>10</sup> MHDCE/mL	400,000 mL	20.0
/ L121	100,000 mL	5.0
( 2% w/v)	200,000 ml	10.0
1% w/v EDTA( ) 7 w/v%	18,000 ml	0.9
	1,282,000 ml	64.1

pH 7.0 ± 0.2

MHDCE = DNA

200 500 9 CFR 114.6

2.0ml DNA 2 x 10

9

:

[Harlan Sprague Dawley 가 ]

20 6 7 ICR 가 5 가 1 10 1(0.2ml) 25- 1 1

4

1/2 3.0ml 1,000

x g

-20

: ELISA

ELISA [Dynatech] 1 II (Disposable Immulon II Flat-Bottom) 가

ELISA

:

(PBST)(pH 5N NaOH 5N HCl 7.2 7.4 )

NaCl	8.50g
NaH <sub>2</sub> PO <sub>4</sub>	0.22g
Na <sub>2</sub> HPO <sub>4</sub>	1.19g
-20	0.50ml

	1,000.00ml
--	------------

(GBS)(pH 5N NaOH 5N HCl 9.5 9.7 )

	0.75g
NaCl	8.50g
	1,000.00ml

\_\_\_\_\_ :

IgG [Kirkegaard and Perry Laboratories, Inc.(  
 .074-1802)]  
 (ABTS) [Kirkegaard and Perry, Inc.]  
 : II 100µl 10mM GBS mL 20µg  
 2 7 1 37 +2 18 1  
 , PBST 3  
 . PBST 1:40 ( 100µl)  
 가 . PBST 가 1  
 3 . PBST 2 1:100 1:10,  
 240 100µl 4 PBST 4 가  
 30 . 4 (abts) 100µl 가 .  
 T =450 . PBST  
 0.850 1.050 .

\_\_\_\_\_ :  
 [Fort Dodge Animal Health]

ELISA : [Dynatech] II 가  
 (GBS) 10ml  
 가 . 1 20µg/ml . 100µl(2µg)  
 7 . 1 37 ±2 . 18 1 2  
 PBST 1:40 PBST 3 1 10  
 0µl . 4 . 1  
 2 10  
 PBST 3 . PBST IgG - (Kirkega  
 ard and Perry) 100µl 가 30 가 PBST 4  
 (ABTS) 100µl 가  
 OD 405 (450)가 0.850 1.050 .  
 PBST , 0.100 .  
 0.500 . 0.40  
 0 .  
 , 가 :  
 , - T- (one-Tailed

Student's T-Test) T- 1.686 T- 1.686 가 (p 0.05 ).

2  
:

( DNA / L121 (MHDCE) )5% 가 ( ) 0.2% 2 x 10<sup>9</sup>

3

) 4 3 2 1 , (DOI  
2 가 10 ) .2 (

1 [Boehringer Ingelheim( BI)] 가 18 21 22 (0.4 x 10<sup>6</sup> )  
R [ 271 032] R (Ingelvac M. hyo R ) (IM) 8 1  
0 2 22 .22 4  
19.6% 가 (Iowa) 15.9% (ISU)  
가 (p = 0.19). R 가 R 가 (p = 0.2)  
7) R 2 (14.6%). R

2 4 가 ISU가 (1.0 x 10<sup>6</sup> ) 25  
2 23 21 1  
4 7  
5.5% 10.4% (p = 0.031)  
2 4 1

2 2 3 1 4  
2 2  
2 4 67 2 1  
18 21 (IM) .24 .24 10 (BI) 2  
- 271 032] .9 IM .5 R [ ( 2 ) 2

1 BI 2 )  
 14ml( $1.4 \times 10^6$ ) 4 4  
 30  
 2 ,25 21 2 1 IM .2  
 5 가 10 가  
 1 가 4  
 10ml( $1.0 \times 10^6$ )  
 3  
 .2 가 30 /

\_\_\_\_\_ :

2ml IM

\_\_\_\_\_

(-70 ) (ISU) 가  
 mL  $10^7$   
 1:100 10ml( ,  $1.0 \times 10^6$  )

1 2 1:100 1:100 14ml( ,  $1.4 \times 10^6$  )  
 10ml( ,  $1.0 \times 10^6$  )

ISU가  
 50mg/ml, 50mg/ml 100mg/ml  
 lb 0.01 0.02 mL IM  
 TM 14ml( 1 ) 10ml ( 2 )

30 (DPC)

\_\_\_\_\_ :

(0 DPV), 1 (1MVP) 30DPC  
 ELISA ( : DAKO Co.)

-20

\_\_\_\_\_ :

(ANOVA)

\_\_\_\_\_

\_\_\_\_\_ : 2 1:10 ELISA  
 ( 가 < 10)

25 15 )가 22 18 2  
 가 가 1

\_\_\_\_\_ 1 \_\_\_\_\_ :





	25	0/25	0/25	14/25
	7	0/7	0/7	0/7

[ 2 ]

		%	P
FDAH	22	15.90%	0.19 **
BI	8	14.60%	0.27 ***
	22	19.60%	
	10	0%	0.88 ****
* $1.4 \times 10^6$ (ISU $1.0 \times 10^6$ )			
** FDAH			
*** BI			
**** BI FDAH			

[ 3 ]

		%	P
FDAH	23	5.50%	0.031 **
	25	10.40%	
	7	0.77%	
* ISU ( $1.0 \times 10^6$ )			
** FDAH			

4  
 1 6 가  
 1 2 A  
 A  
 1,000,000 ( 2ml) % /

( $> 1.0 \times 10^{10}$ MHDCE/ml)	1200,000 mL	60.0
/ L121	200,000mL	10.0
( 2% w/v)	200,000mL	10.0
1% w/v EDTA( )7 w/v%)	18,000ml	0.9
	382,000mL	19.1

pH 7.0 ± 0.2

MHDCE =

DNA

33 21 가 .20 3 3 (IM) 1  
 .10

( 가 < 10)

( 6 , 20 ) 10 가 3.6% (p= 0.0215).  
 1.0 x 10<sup>6</sup> 가 14.6%

가 A가 1 6

1 A ) 33 21 3 ( 3  
 .10 .20 6  
 10ml(1.0 x 10<sup>6</sup> ) .3 26  
 1 (2ml) IM

( -70 ) (ISU) 가  
 mL 10<sup>7</sup>

1:100 10mL( , 1.0 x 10<sup>6</sup> ) ISU가

TM 50mg/ml, 50mg/ml 100mg/ml ISU가  
 1 10mL lb 0.01 0.02 mL IM

26 (DPC) 3

(0 DPV), 35 DPV, -1DPC 26DPC  
 ELISA ( : DAKO Co.)

ANOVA

(Wilcoxon Rank Sum test)

p < 0.05

1:10 가 ELISA  
 ( 가 < 10)  
 ( 35DPV -1DPC 20 15 (15/20) )  
 10 4 가 4  
 A 20 10 6  
 ( 1.0 x 10<sup>6</sup> ) .2 .20  
 8 (40%) 10  
 (10%) % 5 가 3.6%  
 0.0215). 가 14.6% (p =

[ 4 ]

			(1:10)			
			0 DPV **	35 DPV	-1 DPC ***	26 DPC
1	/	20	0/20	9/20	12/20	20/20
2	/	10	0/10	0/10	0/10	4/10
3	/	3	0/3	0/3	0/3	0/3

\* ELISA  
 1:10  
 \*\* DPV =  
 \*\*\* DPC =

[ 5 ]

			%		95% CL	95% C	P **
				*	L		
1	/	20	3.6	7.6	0.07	7.19	0.0215
2	/	10	14.6	20.0	0.33	28.94	
3	/	3	1.8	1.8	-2.67	6.27	

\* CL =  
 \*\* P 1 2 .

4 5 , A 3 1  
 6 .

(57)

1.

, 가 -

1

2.

1 , 가 /  
 - 가 1:25 1:50 .

3.

1 , 1 25% v/v .

4.

3 , 가 1% v/v / -  
 5% 10% v/v .

5.

3 , 2% 15% v/v .

6.

5 , 5% 12% v/v .

7.

1 , 가 .

8.

6 7 , 가 .

9.

1 8 , (Haemophilus parasuis),  
 (Pasteurella multocida), (Streptococcus suis), (Actinoba  
 cillus pleuropneumoniae), (Bordetella bronchiseptica), (Salmon  
 ella choleraesuis) (leptospira)

10.

, 가 -

1

- 10 11. , 1 x 10<sup>8</sup> 3 x 10<sup>11</sup> MHDCE/ml .
- 11 12. , 1 x 10<sup>9</sup> 3 x 10<sup>9</sup> MHDCE/ml .
- 10 13. , , , , .
- 10 14. , , 가 1 25% v/v .
- 14 15. , 가 .
- 14 16. , 가 .
- 10 17. 16 , , , , , 가 .
- 18. , 가 , - .